

WHAT IS CLAIMED IS:

1. A powder dispenser comprising:

a dispenser housing including a cavity for holding a supply of a powder, the cavity
5 having a dispensing opening;

an outlet supply tube fixed relative to the dispenser housing and in fluid
communication with said gas supply bore;

a slider slidably mounted with respect to said dispenser housing between a feed
position and a dispense position, said slider including:

10 a receptacle portion for receiving the powder supplied from said cavity through said
dispensing opening when said slider is in said feed position and for supplying the received
powder to said outlet supply tube when said slider is in said dispense position, said
receptacle portion including a holding member having pores which permit passage of a gas
therethrough but which prevent passage of the powder therethrough; and

15 a vacuum passage in fluid communication with an outer wall of said holding
member to remove gas trapped by said powder through said holding member;

an arrangement for supplying a pressurized gas to said cavity; and

a gas supply bore in said dispenser housing for supplying a pressurized gas to the
receptacle portion when said slider is in said dispense position so as to force the powder
20 from said receptacle portion to said outlet supply tube.

2. The powder dispenser according to claim 1, wherein said arrangement for supplying a
pressurized gas includes a device for supplying the pressurized gas at an angle to said
cavity to cause swirling of the powder in said cavity.

3. The powder dispenser according to claim 2, wherein said device includes an angled
bore at an upper end of said dispenser housing for supplying the pressurized gas at an
angle to said cavity.

4. The powder dispenser according to claim 2, wherein said angle is about 60° to vertical.

5. The powder dispenser according to claim 1, wherein said cavity includes a
substantially conically shaped hopper having said dispensing opening at a lower open end
thereof.

6. The powder dispenser according to claim 1, further comprising a slider housing secured to said dispenser housing for slidably supporting said slider between said feed position and said dispense position, said slider housing including an outlet opening
5 between said gas supply bore and said outlet supply tube.

7. The powder dispenser according to claim 6, wherein said slider housing includes a vent opening in alignment with said dispensing opening, and further comprising a mesh insert in said vent opening have mesh openings that permit escape of gas therethrough but
10 which prevent the escape of powder therethrough.

8. The powder dispenser according to claim 7, wherein said mesh insert includes a mesh plug having a through bore, and a mesh sheet mounted to said mesh plug in covering relation to said through bore, with said mesh plug being positioned in said vent opening.
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9. The powder dispenser according to claim 6, further comprising a first gasket positioned between said dispenser housing and said slider, and a second gasket positioned between said slider and said slider housing to prevent escape of powder.

10. The powder dispenser according to claim 6, wherein said slider includes a recess facing said slider housing and a vacuum passage in fluid communication with said recess for applying a vacuum to said recess to remove powder on said slider housing.
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11. The powder dispenser according to claim 1, wherein said cavity includes a supply opening for supplying new powder to said cavity, and further comprising a removable cap secured to said supply opening, said arrangement being provided in said removable cap.
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12. A method for dispensing predetermined amounts of powder from a powder dispenser, said method comprising the steps of:

30 providing powder to be dispensed in a cavity of a dispenser housing which has a dispensing opening for the cavity;

moving a slider to a feed position relative to the dispenser housing such that a holding member of the slider which has pores that permit passage of a gas therethrough but which

prevent passage of the powder therethrough is supplied with powder from said dispensing opening for said cavity to said holding member;

providing the following cycle of steps at least once until the holding member is precisely filled with a predetermined amount of the powder:

5 supplying a pressurized gas to said cavity to aid in delivery of the powder from said cavity to said holding member;

stopping the supply of the pressurized gas to said cavity;

10 applying a vacuum through a vacuum passage in fluid communication with an outer wall of said holding member to remove gas trapped by said powder through said holding member;

moving the slider to a dispense position relative to the dispenser housing such that the holding member of the slider is positioned over an outlet supply tube fixed relative to the dispenser housing; and

15 supplying a pressurized gas to the receptacle portion through a gas supply bore in said dispenser housing so as to force the powder from said receptacle portion to said outlet supply tube.

13. The method according to claim 12, wherein said step of supplying a pressurized gas includes the step of supplying the pressurized gas at an angle to said cavity to cause
20 swirling of the powder in said cavity.

14. The method according to claim 13, wherein the angle is about 60° to vertical.

15. The method according to claim 12, wherein there is provided a slider housing secured
25 to said dispenser housing for slidably supporting said slider between said feed position and said dispense position, said slider housing including an outlet opening between said gas supply bore and said outlet supply tube and a vent opening in alignment with said dispensing opening, and further comprising the step of venting said holding member through a mesh insert in said vent opening of said slider housing.

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16. The method according to claim 15, further comprising the step of cleaning an area between said slider and said slider housing by applying a vacuum when said slider is moved to said dispense position.

17. The method according to claim 15, further comprising the step of cleaning an area between said slider and said dispenser housing by applying a vacuum when said slider is moved to said dispense position.
- 5 18. The method according to claim 12, further comprising the step of applying a vacuum to said cavity to de-agglomerate the powder in the cavity when said supply of pressurized gas to the cavity is stopped.